From Lectures to the World Wide Web:
Some Instructional Design Considerations

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The intrinsic appeal and power of World Wide Web has made it an attractive medium for the delivery of courseware in higher education. Does the World Wide Web fundamentally change the nature of traditional instructional presentations? The purpose of this paper is to examine this through instructional design considerations that arise when "traditional" lectures are transformed into stand-alone web based instruction. For faculty, these considerations generally begin with an encounter with the medium itself, that is, the technical, cultural and cognitive aspects of World Wide Web, which present options of delivery quite different from a textbook and lecture format. We will illustrate our examples and the types of questions that arise based on a case study implemented at the School of Medicine in UCLA, which involved the development of a lecture: Pathophysiology of Disease (Cardiovascular), via the World Wide Web. The framework used to examine this transformation is derived from classic instructional design models: Objectives, Learners, Content and Assessment.

Objectives

While the overall goals of the module remained the same as the lecture, the web made it possible to incorporate objectives that included optional learning. Thus "unintended learning outcomes" could be presented formally to students, but as an option. Further, because we illustrated content with case studies, we could include transfer of knowledge in the objectives to a greater degree than was possible in a lecture.

Learners

Having students learn via lectures, class notes and text books, versus self paced, collaborative learning was a major consideration. Would the learning strategies used by students be transferred and transformed via web based instruction? Student evaluations revealed that at least some students were not accustomed to learning with technology. The learner analysis took into account questions of access, student familiarity with learning from computers, time involved in completing the module and student attitudes towards web based instruction.

Content

We used the same slides and text as that used for the original lecture. However, the flexibility with which content could be presented over the web warranted a major reorganization of content. Much thought was given to sequencing, chunking information, learner versus program control, choosing text and audio elaborations, and supplementary images. Using a web based authoring tool, we also considered how content could be enriched for students through web based conferencing, and student tracking.

Assessment

Assessment is virtually absent in lectures- in the web based module we incorporated self assessment via quizzes. Students received immediate feedback on their responses to multiple choice questions. The objective of these quizzes was to encourage periodical self monitoring of learning.

Conclusion

There was some uncertainty about the potential of delivering standalone instruction via the WWW, because it eliminates the richness of a face to face interaction with students. Although the instructor's voice was incorporated to compensate for this interaction, we found that some students preferred "live" instruction by instructors. A combination of the two, involving face to face problem based learning was considered as a alternative for the future. Overall, we found that the WWW as a medium of delivery had a large influence on how content was presented, on student assessment and faculty preparation. The web encouraged the use of additional elaborated content and images. The time required to develop the materials was far greater than that of a lecture preparation. For well designed web based "lectures", faculty are encouraged to take these factors into account before they begin the process of transforming lectures into web based presentations.